



NEWS! From the **NAVAL OBSERVATORY**

U.S. NAVAL OBSERVATORY

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U.S. Naval Observatory Press Release

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USNO-JPL SATELLITE CONCEPT SELECTED FOR DEVELOPMENT STUDY

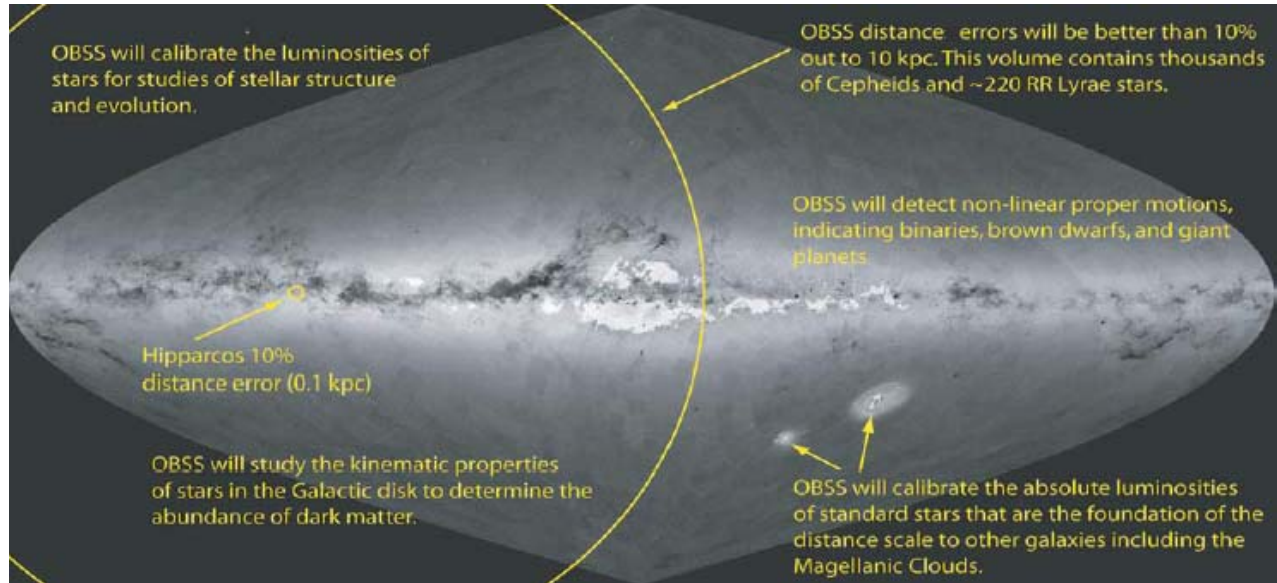
On July 29, 2004, the National Aeronautics and Space Administration (NASA) selected nine proposals from a field of 26 submissions for detailed feasibility studies for the next generation of space probes in its Astronomical Search for Origins Program. One of these selections is a joint venture between the U.S. Naval Observatory (USNO) in Washington, DC, and the Jet Propulsion Laboratory (JPL) in Pasadena, CA.

The proposal, tentatively called the Origins Billion Star Survey (OBSS) envisions a satellite that will provide a complete census of giant extrasolar planets for all types of stars in the Milky Way Galaxy and the demographics of stars within 30,000 light-years of the Sun. OBSS will measure the positions of one billion stars and provide unprecedented data on their parallaxes, proper motions, luminosities, spectrometry, photometry, binarity, and photometric variability.

OBSS will be optimized for the detection of extrasolar giant planets of 10 Jupiter masses and less, orbiting all Sun-like stars within 300 light-years of the solar system with orbital periods of up to 10 years. It will enable the determination of the physical properties of these planets, and also provide a definitive census of the number of "brown dwarf" companions in the 10- to 80 Jupiter mass range, and will be able to photometrically detect some 2000 "hot Jupiters" orbiting parent stars brighter than red magnitude 13.5.

In addition, OBSS will yield a comprehensive characterization of stars in a volume that will encompass half the Galaxy, including the solar neighborhood and the galactic nucleus. Accurate distances, space motions, absolute luminosities, surface activity, binarity, and the presence of low-mass companions will for the first time be made available for a significant population of the Milky Way's stars. Precise knowledge of these parameters will allow astronomers to model the structure and evolution of the Galaxy with unprecedented detail.

The OBSS Science and Instrumentation team is under the direction of Principal Investigator Dr. Kenneth J. Johnston of USNO, who will lead a team of scientists and engineers from USNO, JPL, the California Institute of Technology, the Carnegie Institution of Washington, and the University of Virginia.



OBSS coverage in a galactic context